

Contribution of tourism to economic development in selected European countries

Doprinos turizma ekonomskom razvoju u odabranim evropskim zemljama

Danijela Pantović^{a*}, Kamelia Chaichi^b, Sanja Pavlović^c

^a University of Kragujevac, Faculty of Hotel Management and Tourism Vrnjačka Banja, Serbia

^b Queen Margaret University, Business School, Edinburgh, UK

^c University of Belgrade, Faculty of Geography, Belgrade, Serbia

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Abstract

This study explores the interaction of key indicators that reflect tourism's contribution to economic development, including total and direct employment contributions, total and direct contributions to GDP, capital investment, and visitor exports (foreign consumption). Using data from the Travel and Tourism Development Index for 2019, published by the World Economic Forum, the study employs entropy as a measure of equality to analyze these indicators across 30 countries. The findings highlight significant divergence, with coastal countries exhibiting the highest values across all indicators. The study emphasizes the necessity for countries to develop strategies that leverage natural and cultural assets, focusing on increased investment and fostering foreign spending. These practical implications aim to enhance the economic benefits of tourism for sustainable development.

Keywords: tourism development, economic impact, entropy

Sažetak

Studija istražuje interakciju ključnih indikatora koji odražavaju doprinos turizma ekonomskom razvoju, uključujući ukupne i direktne doprinose zaposlenosti, ukupne i direktne doprinose BDP-u, kapitalne investicije i izvoz posetilaca (strana potrošnja). Koristeći podatke iz Indeksa razvoja putovanja i turizma za 2019. godinu, koji je objavio Svetski ekonomski forum, studija koristi entropiju kao meru jednakosti za analizu ovih indikatora u 30 zemalja. Nalazi ističu značajnu divergenciju, pri čemu obalne zemlje pokazuju najviše vrednosti u svim pokazateljima. Studija naglašava neophodnost da zemlje razviju strategije koje koriste prirodna i kulturna dobra, fokusirajući se na povećanje investicija i podsticanje inostrane potrošnje. Ove praktične implikacije imaju za cilj povećanje ekonomskih koristi od turizma za održivi razvoj.

Ključne reči: razvoj turizma, ekonomski uticaj, entropija

1. Introduction

According to a report from the Statistics Research Department in 2022, the travel and tourism industry in Europe is a prominent global sector, accounting for about two-thirds of international tourist arrivals worldwide (Statista, 2022.a). However, the COVID-19 crisis severely impacted this industry, leading to a substantial decline in tourist arrivals from around 745 million in 2019 to 240 million in 2022. Fortunately, the sector has begun to recover, with 304 million international tourists arriving in 2023. During the pandemic, traveller preferences shifted towards domestic and neighboring destinations. The travel and tourism sector holds significant importance as

a major job provider, having generated approximately 34.65 million jobs across Europe in 2021 (Statista, 2022.b). It plays a vital role in the European economy's revival.

It is evident from several studies (Ilic et al., 2023; Škare et al., 2021; Thomas et al., 2020; Zurub et al., 2015) that the travel and tourism sector significantly impact the European economy. Tourist spending has a multiplier effect on the economy (Zaei & Zaei, 2013). Some of the key economic benefits of this sector include job creation and income generation (Alisa & Ridho, 2020; Zaei & Zaei, 2013). Before the COVID-19 pandemic, the travel and tourism sector contributed €1.92 trillion to the

*Corresponding author

E-mail address: danijela.durkalic@kg.ac.rs

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European economy, equivalent to 9.5% of the total GDP. In 2021, the sector experienced a 23.9% growth. In 2022, it contributed an additional €439 billion, representing a 38% increase (WTTC, 2022). The latest report from the World Travel and Tourism Council (WTTC, 2022) indicated a 15.7% rise in jobs during 2022, helping to bring employment levels back to pre-pandemic numbers.

Given the significant contribution of the travel and tourism sector to the European economy, it is imperative for European countries to develop strategies to enhance this sector and leverage their geographic, natural, and cultural assets. The findings of this research play a crucial role in promoting the economic development of travel and tourism in 30 European countries, offering valuable strategies to inform decision-making (WTTC, 2022).

2. Background

2.1. Impact of travel and tourism sector in European countries

Empirical evidence from multiple European countries has been instrumental in shedding light on the diverse impacts of travel and tourism, with a particular emphasis on economic aspects like income and employment (Figini & Patuelli, 2022). Recent research conducted by Figini & Patuelli (2022) delves into the economic contributions of the travel and tourism sector to the GDP of European nations. Their study underscores the substantial role of tourism in the GDP, gross value added, and employment of these countries. Additionally, they propose a more in-depth exploration of the links between tourism and other economic sectors that indirectly benefit from tourism in the future.

The academic community has seen a growing body of research investigating the economic impacts of the travel and tourism sectors in European countries. In a study by Brida et al. (2020) the dynamics of economic growth among European countries were explored, with a focus on the impact of growth rates in per capita GDP and international tourist arrivals per inhabitant as vital factors in tourism growth. Their findings underscore that the travel and tourism sector significantly contribute to economic growth through various direct and indirect channels. As highlighted in Cardoso & Ferreira (2000) research, the economic impact of tourism is evident across four dimensions: income, balance of payments, employment opportunities, and investment. The travel and tourism sector is perceived as a driving force for economic recovery in European nations, and governments are encouraged to support it as a part of the solution for stimulating economic growth (Jucan & Jucan, 2013). For example, a study by Zurub et al. (2015) on Romania's tourism industry underscores the significance of the travel and tourism sector as a crucial element in solutions during economic crises, particularly in relation to sustainable development and addressing business complexities. Saseanu et al. (2020) conducted research across 30 European countries, with a specific emphasis on the contribution of travel and tourism to destination sustainability and the impact of digitalisation on tourism efficiency.

The impact of tourism extends beyond economic aspects to encompass physical and social dimensions (Wong, 2004). Physical impacts include ecosystem and environmental considerations, as the natural environment serves as a critical foundation for tourism. Notably, the concept of ecotourism, initially intended to minimise environmental degradation, has inadvertently led to negative environmental consequences due to new accommodations and activities that affect various ecosystem components (Wong, 2004). Another environmental concern is the increase in litter in tourist destinations, which not only diminishes the beauty of the environment but also escalates the cost of litter removal (Andereck et al., 2005). Tourism can also negatively impact local inhabitants, particularly in wild and coastal environments, affecting native animal populations and their natural habitats (Podovac et al., 2020; Frauman & Banks, 2011; Lazarević & Stanišić, 2023).

In the long term, tourism can exert negative social impacts on destinations, prompting researchers to investigate these issues across various European countries. For instance, resident attitudes were found to significantly depend on personal and locational characteristics, including factors like tourist contact, length of residence, age, and language, which should be taken into greater consideration by public and private tourism development agencies (Brougham & Butler, 1981). Studies such as Tsundoda & Mendlinger's (2009) have revealed that many local residents resist changes in their towns brought about by increased tourism development, even when aware of the potential economic benefits. Employed residents expressed concerns about the emerging polarised economy and the division of social classes due to tourism development, whereas wealthier residents viewed tourism development as advantageous. Differences in social and moral values between residents and tourists were identified as significant drivers of changes, either supporting tourism development or causing conflict in the region (Woosnam et al., 2009). Other negative impacts associated with tourism encompass an increase in the crime rate (Andereck et al., 2007), negative alcohol-related behaviours (Andereck et al., 2005), rising living costs (Frauman & Banks, 2011) and issues like prostitution (Park & Stokowski, 2009).

Nevertheless, the travel and tourism sector can also facilitate and promote intercultural interactions as tourists actively engage with residents as part of their travel experience, especially when they come from diverse cultural backgrounds. This can foster intercultural exchanges and enhance the community's sense of pride (Andereck et al., 2007).

2.2. Entropy research on travel and tourism

Entropy, originally introduced in the 19th century, is a concept used to quantify the uncertainty associated with random variables within information theory. This concept has wide-ranging applications across various fields, including science, biology, economics, linguistics, and engineering, making it pertinent in diverse domains, including the travel and tourism industry (Natal et al., 2021).

In the context of travel and tourism development, several methodologies are employed to identify the factors influencing this sector. These methods include Principal Component Analysis (PCA) (Hoang et al., 2018; Muresan et al., 2016; Tsiotas et al., 2020), Delphi method (Kaufmann, 2016; Szpilko, 2014; Yooetch et al., 2022), the analytical hierarchy process (AHP) (Crouch & Ritchie, 2005; Masih et al., 2018) and Information Entropy-Based Weighting (IEW) (Andria et al., 2021; Weerathunga et al., 2020; Zhu et al., 2014). However, each of these methods presents its own limitations.

The AHP and Delphi methods heavily depend on expert subjectivity, with AHP also relying on experts to make comparisons between various indices (Avella, 2016; Nefeslioglu et al., 2013). In contrast, PCA and IEW are quantitative methods that derive weights from data. However, PCA faces challenges in evaluating the covariance matrix and may struggle to capture invariance without explicit training data and strong correlations (Karamizadeh et al., 2013). On the other hand, the IEW method is more objective as it doesn't impose constraints on the dataset and focuses solely on mathematical relationships between the data (Zhu et al., 2014).

As a result, there is a growing body of literature that has recently applied the concept of entropy in the context of travel and tourism. For example, Del Chiappa (2018), employed an entropy approach to conduct a factor-cluster analysis among residents in Valencia, Spain, to understand their perceptions of the impacts of cruise tourism on their city. This study revealed three distinct clusters of opinions, namely 'pessimists,' 'cautious supporters,' and 'optimists,' with a majority of respondents expressing doubts about the positive impact of tourism on various aspects. Similarly, Zhu et al. (2014) used entropy-based weighting methods to assess the competitiveness of tourism destinations in 16 Chinese cities. They applied entropy and cluster analysis to classify these cities based on input and competitiveness dimensions, uncovering significant regional disparities in competitiveness. This highlighted the need for robust policies to be implemented by local governments and travel and tourism decision-makers.

In line with this trend, a recent study by Ozkaya & Demirhan (2022) employed the entropy method to analyse the competitiveness of 43 European countries in the travel and tourism industry. Their research aimed to evaluate the current status of the industry in European and Eurasian countries, comparing relevant indicators. Notable indicators in their study included safety and security, the labor market, business environment, health, government policies, price competitiveness, infrastructure, and sustainability. Their findings indicated that high-income European countries possess high-quality infrastructure and cultural amenities, attracting substantial numbers of tourists. In contrast, Eastern Europe benefits from competitive pricing, while Southern Europe stands out for significant investments in natural resources and tourism infrastructure. The authors suggested future studies revisit this analysis in subsequent years to track changes in European nations (Ozkaya & Demirhan, 2022).

Building upon this proposal, the present study applies the entropy method to 30 European countries to assess the indicators influencing the economic development of the travel and tourism sector.

3. Materials and methods

3.1. Research area

The examination of tourism's impact on economic development encompassed a study of 30 European nations. These countries are a diverse mix, including members of the European Union, nations in the Balkans and Eastern Europe, and the United Kingdom, which was formerly an EU member but is no longer part of the union. Despite its departure from the EU, the UK was included in the analysis due to its substantial potential within the tourism industry and its significant contribution to the UK's GDP. Emphasizing the importance of this analysis is the newly established trade and economic relations between the European Union and the United Kingdom (Commission for Economic Policy, 2022). In order to ensure geographical representation and territorial equity in the research, countries from various regions across Europe were carefully selected (Brida et al., 2020).

Figure 1. Map of the research area



Source: Authors' illustration, created by using www.mapchart.net

The research area includes the following regions and countries: 1) Balkans and Eastern Europe (Albania, Bosnia and Herzegovina, Bulgaria, Hungary, Moldova, Montenegro, North Macedonia, Romania, Serbia, Slovak Republic, Slovenia); 2) Central/Eastern Europe (Poland, Czech Republic, Latvia, Estonia); 3) Northern Europe (Denmark and Sweden), 4) Western Europe (Austria, France, Germany Luxembourg, Netherlands); 5) Southern/Mediterranean Europe (Croatia, Cyprus, Greece, Italy, Malta, Portugal, Spain); 6) connected region with EU – United Kingdom.

3.2. Research methods and data analysis

The initial phase of this research involved calculating entropy as a metric for assessing inequality, with a focus

on examining the convergence among the mentioned countries using the observed indicators. The entropy statistic denoted as $H(x)$ in this study serves as a measure of the evenness of distribution, forming the foundation for constructing the inequality measure $I(x)$. In the context of tourism competitiveness, $I(x)$ signify the disparity in the values of a given competitiveness parameter. This measure of inequality proves valuable in the examination of spatial distinctions between countries or regions. It can be mathematically represented by the equation as originally proposed by Shannon (1948) and further discussed by Shannon (1948) and Czyż & Hauke (2015) as follows:

$$I(x) = H(x)_{max} - H(x)$$

$$= \log_2 n - \sum_{i=1}^n p(x_i) \log_2 \frac{1}{p(x_i)}$$

$$= \sum_{i=1}^n p(x_i) \log_2 [n p(x_i)]$$

$$\text{for } 0 \leq I(x) \leq \log_2 n$$

where $I(x) = 0$ indicates the absence of inequality (or uniform distribution), while $I(x) = \log_2 n$ indicates the maximum non-uniformity of the selected parameters x .

Table 1. Label and descriptive of variables

Contribution of tourism to economic development	Abbreviations	Minimum	Maximum	Mean	Std. Deviation
Total Contribution to Employment	TCEm	4.95608	32.7826	12.45996	6.494149
Direct contribution to employment	DCEm	1.69742	12.2576	5.231089	2.737272
Total contribution to GDP	TCGdp	4.69618	32.0857	11.39562	6.357296
Direct contribution to GDP	dcgdp	1.75675	11.4109	4.447434	2.568154
Investment (Capital investment)	inv	2.16598	29.6877	6.864228	5.529167
Visitor Exports (Foreign spending)	ve	2.8798	48.247	12.43659	12.72952

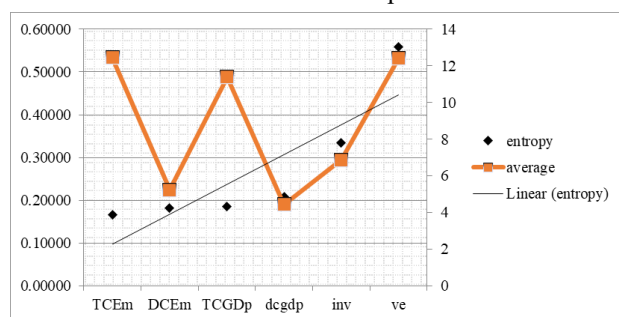
Source: Authors' elaboration

4. Results and discussion

4.1. Implications for convergence

Furthermore, it is intriguing to assess the extent of convergence in the role of tourism in economic development across the studied countries. This examination was accomplished by calculating the entropy level for the year 2019. The evaluation of entropy as an indicator of inequality will provide insights into whether there is convergence or divergence in the contribution of tourism to the economic development of the chosen European nations. Results of entropy in the contribution of tourism to economic development are presented in Figure 2.

Figure 2. Entropy results in the contribution of tourism to economic development



Source: Authors' calculation

Based on the data pertaining to various parameters like $TCgdp$, $Tcem$, ve , $DCgdp$, inv and $Dcem$, our analysis reveals notable variations in the parameter of Visitor Exports (Foreign consumption). This discrepancy suggests a divergent state, as the values tend to diverge towards 1. This is primarily due to specific countries, such as Albania, Croatia, and Greece, exhibiting a significantly high share of visitor exports. This observation aligns with the findings of (Bozdo, 2018), who emphasizes the pivotal

role of visitor exports in the direct contribution of travel and tourism in Albania. Conversely, certain countries, including Germany and Slovakia, report extremely low values for this parameter.

A similar situation arises with the investment indicator, although the differences are somewhat less pronounced (with an entropy measure of 0.33365), implying a degree of convergence in this indicator. Each country independently determines its investments in tourism, as these typically involve capital investments. In 2019, Montenegro and Greece were the countries with the highest capital investments in tourism.

The entropy level of 0.20858 for the indicator of the direct contribution of tourism to GDP ($DCgdp$) indicates a tendency towards convergence among the observed countries in this particular indicator. However, it's essential to acknowledge that complete uniformity is challenging to achieve, given the diverse natural, cultural, and anthropogenic factors that influence tourism development in individual countries. Croatia records the highest value for this indicator, while the Netherlands reports the lowest, a pattern consistent with the observations of Buljat (2022), regarding Croatia's high tourism numbers and Cyrek & Fura (2019) explaining the Netherlands' relatively lower GDP compared to other EU countries.

The obtained entropy values for the indicators of the total contribution to GDP ($TCGDP$) and direct contribution to employment ($DCEm$) are remarkably similar, amounting to 0.18460 and 0.18223, respectively. These results suggest a high degree of uniformity among the entire group of countries concerning their total contribution to domestic production and services, as well as the direct contribution to employment. Montenegro, Croatia, and Albania exhibit the highest values in the Total

contribution to GDP indicator, while Poland and the Netherlands report the lowest figures.

The lowest entropy, indicating the highest level of convergence among the observed countries, is recorded for the crucial Tcem indicator (0.16613). This indicator reflects a pronounced catch-up effect in terms of the Total contribution to Employment within the group of 30 European countries. Understandably, given the significant role of tourism in GDP and employment, the values of this indicator are highest in Croatia, Montenegro, Albania, and Greece, while Poland, Serbia, and the Slovak Republic report the lowest values.

In addition to entropy, it's essential to consider the trends in the average value of the contribution of tourism to the economic development index in 2019. Based on the results presented, it can be concluded that, during this period, this indicator exhibited similar or opposing tendencies as entropy, with the exception of the ve indicator, which reveals significant disparities between European countries.

Conclusion

The results emphasize that the most influential parameter is the share of tourism in the gross domestic product (TCgdp), followed by the share of employment in tourism as a percentage of total employment (TCem), while the direct contribution to employment (DCem) is deemed less significant. Conversely, the entropy and convergence findings indicate that the smallest disparities are observed in the total contribution of tourism to GDP and the direct contribution to employment. Moreover, the notable differences in the entropy indicators is evident in coastal or shoreline countries which exhibit the highest values of these indicators.

The practical implications of this study suggest a need for increased emphasis on investments and foreign consumption in the forthcoming period for European countries. Europe, as a diverse region with rich historical and geographical diversity, holds significant potential for the tourism sector.

To the best of the author's knowledge, this study represents the first attempt to analyse 30 European countries concerning their contributions to economic development through entropy analysis, which provide insights into future opportunities within the tourism industry.

One limitation of this study lies in its analysis of the current tourism conditions in the aforementioned countries and indicators. Future research may explore additional indicators and extend the time frame as new data becomes available, considering the significant changes that have occurred since 2021. Furthermore, there's an opportunity to investigate how different regions in Europe are financed and how additional national resources can be channeled into tourism to boost tourist numbers. There is ample room for future research to delve

into various facets of tourist interests and monitor the types of tourists drawn to specific European destinations.

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